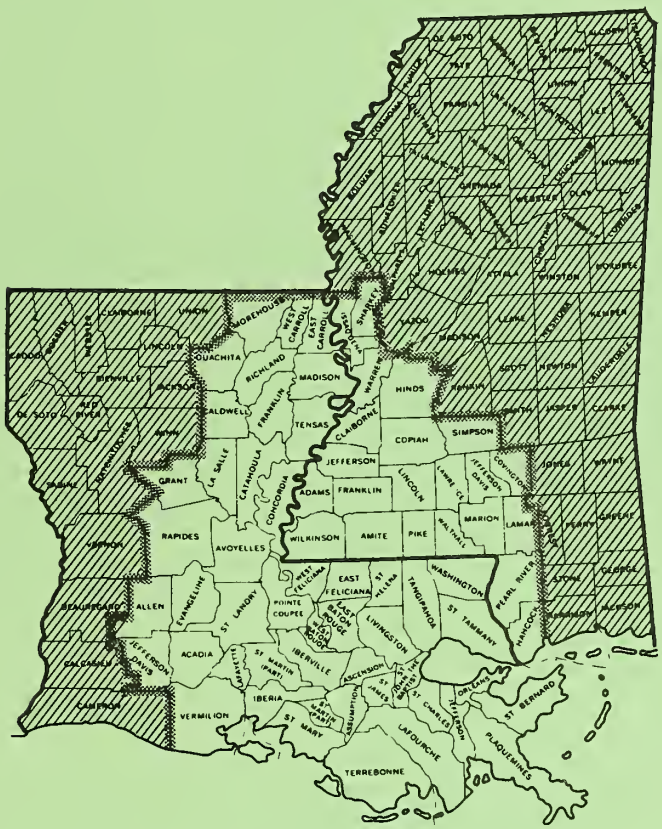
SOIL SURVEY INTERPRETATIONS FOR WOODLANDS IN THE SOUTHERN MISSISSIPPI VALLEY SILTY UPLANDS OF LOUISIANA AND MISSISSIPPI

With Average Rainfall of 30 to 42 Inches During the Frost-Free Period



PROGRESS REPORT W-3 - - OCTOBER 1968

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Fort Worth, Texas

4-27224 10-68
USDA-SCS-FORT WORTH, TEX. 1968

This report contains interpretations of soil surveys for woodland use and management in the Southern Mississippi Valley-silty uplands (134) in Louisiana and Mississippi, with mean precipitation of 30 to 42 inches during the frost-free period. The purpose is to provide currently available knowledge about soils as they relate to the establishment, growth, management, and harvesting of wood crops for the use of foresters, agricultural workers, woodland owners, and woodland managers. The information will be used by the Soil Conservation Service and cooperating agencies in the development of work unit (county) technical guides, soil handbooks, and published soil surveys.

Field information was gathered by teams of foresters and soil scientists. Representatives of Federal and State agencies, the wood-using industry, and others cooperated in gathering field data. Information obtained from soil-woodland studies was recorded by soil taxonomic units. Hardwood site index and soil suitability was compiled by W. M. Broadfoot, Soil Scientist, Southern Hardwood Laboratory, Southern Forest Experiment Station, Stoneville, Miss. Other information was compiled by R. R. Covell, State Soil Scientist, Soil Conservation Service, Jackson, Miss. The interpretations presented herein are made for use with soil surveys.

Table 2, SOIL RATINGS FOR WOODLAND USE, includes some evaluations for individual soil units. The soil series listed are those defined according to the current soil classification system. In column one (1), the soil units including slope, erosion, and textural classes were consolidated within a soil series where it was determined there were no differences in the productivity, species suitability, or management problems. The soils are listed alphabetically by series.

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Column two (2) includes a list of some of the commercially important tree species which are adapted to the soil in column one. These are the tree species which woodland managers generally favor in intermediate or improvement cuttings, after considering the form and vigor of individual trees. Priority between species will be influenced by local marketability and the owner's objectives, as well as by growth rates, values, and the quality of wood products from a given species.

Column three (3) indicates the average site index for the most important species listed in column two. The standard deviation is shown as a plus or minus figure (±) for each species where five or more plots were taken. The site index curves used for each tree species are shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. An asterisk (*) following a site index rating indicates the rating is an estimate based on the same species on a similar soil, or by comparison with another species on the same soil. Site index is the average height of dominant trees at age 30 for cottonwood, age 35 for sycamore, and age 50 for all other species.

Column four (4) indicates the range of site index of the most important tree species in column two. The range in site index values is dependent on soil physical conditions, aeration, and nutrient and moisture availability during the growing season.

Column five (5) evaluates the potential erosion hazard of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas. A rating of slight indicates that problems of erosion control are unimportant. A rating of moderate indicates some attention must be given to prevent unnecessary soil erosion. A rating of severe indicates that intensive treatments,

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or special equipment and methods of operation are needed to minimize soil erosion. The potential erosion hazard is based on slope, soil depth, and erodibility, and soil loss tolerance.

Column six (6) includes evaluation of equipment restrictions. Ratings reflect limitations in the use of equipment for managing or harvesting the tree crop. A rating of slight indicates equipment use is seldom limited in kind or time of year. A rating of moderate indicates a need for modified equipment or seasonal restrictions due to slope, obstructions, soil wetness, flooding, or overflows. A rating of severe indicates the need for specialized equipment due to one or more of the factors listed above.

Column seven (7) indicates the degree of expected seedling mortality during the first two growing seasons after trees are planted or direct seeded. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of slight indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of moderate indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of severe indicates that unsatisfactory survival is likely on more than 50 percent of the area.

Column eight (8) lists several suitable tree species for planting on the soil named in column one. The list may include some species which do not normally occur in native stands on the designated soil or in this resource area, as well as some of the important species listed in column two.

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Column nine (9) shows the ordination of the mapping units into a woodland suitability group. A woodland suitability group is made up of soils that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. The ordination system and the suitability group symbols are explained in the following paragraphs.

The first element of the group symbol indicates the woodland suitability class. It expresses site quality by an arabic numeral ranging from 1 to 5, with class 1 the highest in potential productivity, followed by class 2, 3, 4, and 5. It is based on the average site index of one or more indicator forest types or tree species, as shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. The indicator species are underscored in column two of Table 2.

The second element in the symbol indicates the suitability subclass. It expresses selected soil properties that cause moderate to severe hazards or limitations in woodland use or management, by one of the following lower case arabic letters:

Subclass x (stoniness or rockiness). Soils having restrictions or limitations for woodland use or management due to stones or rocks.

Subclass w (excessive wetness). Soils in which excessive water, either seasonally or yearlong, causes significant limitations for woodland use or management. These soils have restricted drainage, high water tables, or overflow hazards which adversely affect either stand development or management.

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Subclass t (toxic substances). Soils that have, within the rooting zone, excessive alkalinity, acidity, sodium salts, or other toxic substances that limit or impede development of desirable tree species.

Subclass d (restricted rooting depth). Soils with restrictions or limitations for woodland use or management due to restricted rooting depths. Soils shallow to hard rock, hardpan, or other layers in the soil that restrict roots are examples.

Subclass c (clayey soils). Soils having restrictions or limitations for woodland use or management due to the kind or amount of clay in the upper portion of the soil profile.

Subclass s (sandy soils). Sandy soils with little or no textural B horizons and having moderate to severe restrictions or limitations for woodland use or management. These soils impose equipment limitations, have low moisture-holding capacity, and normally are low in available plant nutrients.

Subclass f (fragmental or skeletal soils). Soils with restrictions or limitations for woodland use or management due to large amounts of coarse fragments in the profile over 2 mm and less than 10 inches, but includes flaggy soils.

Subclass r (relief or slope steepness). Soils with restrictions or limitations for woodland use or management due only to steepness of slope.

Subclass o (slight or no limitations). Soils with no significant restrictions or limitations for woodland use or management.

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Some kinds of soil may have more than one set of subclass characteristics. Priority in placing each kind of soil into a subclass is in the order that the subclass characteristics are listed above.

The third element in the symbol indicates the degree of hazards or limitations, and the general suitability of the soils for certain kinds of trees. The three management problems considered here are: (1) erosion hazard, (2) equipment restrictions, and (3) seedling mortality.

The numeral 1 indicates soils with no to slight management problems, and they are best suited for needleleaf trees.

The numeral 2 indicates soils with one or more moderate management problems, and they are best suited for needleleaf trees.

The numeral 3 indicates soils with one or more severe management problems, and they are best suited for needleleaf trees.

The numeral 4 indicates soils with no to slight management problems, and they are best suited for broadleaf trees.

The numeral 5 indicates soils with one or more moderate management problems, and they are best suited for broadleaf trees.

The numeral 6 indicates soils with one or more severe management problems, and they are best suited for broadleaf trees.

The numeral 7 indicates soils with no to slight management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 8 indicates soils with one or more moderate management problems, and they are suitable for either needleleaf or broadleaf trees.

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The numeral 9 indicates soils with one or more severe management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 0 indicates the soils are not suitable for the production of major commercial wood products.

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TABLE 1 - GUIDE FOR WOODLAND SUITABILITY CLASSES

SOUTHERN MISSISSIPPI VALLEY-SILTY UPLANDS

Indicator Forest Type or Species		1 Very High	2 High	3 Moderately High	4 Moderate	5 Low
		Site Index Range				
Cottonwood	(1)	106+	96-105	86-95	76-85	75-
Yellow-poplar	(2)	106+	96-105	86-95	76-85	75-
Sweetgum	(3)	96+	86-95	76-85	66-75	65-
Water oaks	(4)	96+	86-95	76-85	66-75	65-
Loblolly pine	(5)	96+	86-95	76-85	66-75	65-
Slash pine	(6)	96+	86-95	76-85	66-75	65-
Shortleaf pine	(5)	86+	76-85	66-75	56-65	55-
Longleaf pine	(6)	86+	76-85	66-75	56-65	55-
Sou.-red oak	(7)	86+	76-85	66-75	56-65	55-
Nuttall oak	(8)	96+	86-95	76-85	66-75	65-

(1) Broadfoot, W. M., 1960, Field Guide for Evaluating Cottonwood Sites, USFS Occ. Paper 178 (Fig. 4).

(2) Doolittle, W. T., 1957, Site Index Curves for Yellow-poplar-Sou. Appalachians.

(3) Broadfoot, W. M., 1959, Guide for Evaluating Sweetgum Sites, USFS Occ. Paper 176 (Fig. 4).

(4) Broadfoot, W. M., 1963, Guide for Evaluating Water Oak Sites in the Mid-south, USFS Res. Paper SO-1 (Fig. 4).

(5) Coile, T. S. and F. X. Schumacher, Jour. For. 55:432-435 (Fig. 4).

(6) U. S. Forest Service, 1929, Volume, Yield and Stand Tables for Second Growth Southern Pines, USDA Misc. Publ. 50 (Fig. 2,3,4).

(7) Schnur, L. G., 1937, Yield, Stand and Volume Tables for Even-aged Upland Oak Forests, USDA Techn. Bull. 560, Fig. 2 (MLRA 116, 117, 118, 119), and Olson, D. G., 1959 Site Curves for Upland Oaks in Sou. Appalachians, SE For. Expmt. Sta. Res. Note 125 (MLRA 122, 123, 125, 128, 129, 130, 136).

(8) Broadfoot, W. M., Unpublished manuscript, Sou. For. Expmt. Sta., 1966.

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TABLE 2. SOIL RATINGS FOR WOODLAND USE

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Adler silt loam 0-2% slopes	Ash, green Cottonwood, eastern Elms, American and slippery Hackberry and sugarberry Honeylocust Maple, red Oak, cherrybark Oak, Nuttall Oak, water Oak, willow Pecan Walnut, black Sycamore	112 114 96	127-92 121-99 102-80	slight	slight	slight	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, Water	1o4
Adler silt loam 0-2% slopes frequently flooded				slight	moderate	moderate		1w5
Arkabutla silt loam, loam, silty clay loam 0-2% slopes	Ash, green Baldcypress Cottonwood, eastern Elms, American and slippery Hackberry Honeylocust Maple, red Oak, cherrybark Oak, laurel Oak, Nuttall Oak, overcup Oak, water Oak, white Oak, willow Persimmon, common Pine, loblolly Sweetgum	93±5 108± 99±8 107±5 97±8 99±7 100 98±7	105-71 118-88 104-87 114-95 104-85 103-89 113-96 105-86	slight	moderate	slight	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Pine, loblolly Yellow-poplar	1w8
Arkabutla silt loam, loam, silty clay loam 0-2% slopes Frequently flooded				slight	severe	moderate		1w9
Atwood silt loam 0-8% slopes	Hickories (except water) Oak,cherrybark Oak, Shumard Oak, white Pine, loblolly Sweetgum	 90 86*	 100-80 95-85 95-75	slight	slight	slight	Oak, cherrybark Oak, Shumard Sweetgum Yellow-poplar	2o7

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	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bude								
silt loam	Oak, cherrybark		90-75	slight	moderate	slight	Oak, cherrybark	1w8
0-5% slopes	Oak, water						Oak, Shumard	
	Oak, willow						Pine, loblolly	
	Oak, white						Pine, slash	
	Pine, loblolly	98	105-87				Sweetgum	
	Pine, slash	100	106-87				Yellow-poplar	
	Sweetgum		95-80					
	Pine, longleaf	80	86-75					
Calhoun								
silt loam	Oak, cherrybark			slight	severe	moderate	Oak, cherrybark	2w9
0-2% slopes	Oak, southern red						Pine, loblolly	
	Oak, water						Sweetgum	
	Oak, white							
	Pine, loblolly	90	95-86					
	Pine, slash	90	95-86					
	Sweetgum							
	Yellow-poplar							
Calloway								
silt loam	Ash, green or white	68	80-50	slight	moderate	slight	Ash, green or white	2w8
0-5% slopes	Oak, cherrybark	78	83-63				Oak, cherrybark	
	Oak, Nuttall	80*	87-65				Oak, Nuttall	
	Oak, Shumard						Oak, Shumard	
	Oak, southern red						Oak, water	
	Oak, swamp chestnut						Oak, willow	
	Oak, water	82	89-67				Sweetgum	
	Oak, willow	80*	84-67				Yellow-poplar	
	Oak, white						Pine, loblolly	
	Pine, loblolly	95	98-86				Pine, slash	
	Pine, slash	95	98-86					
	Sweetgum	86	93-71					
	Sycamore, American							
	Tupelo, black							
	Yellow-poplar							
	Pine, longleaf	80	90-					
Collins								
silt loam	Ash, green & white	96	103-74	slight	slight	slight	Ash, green	1o7
0-2% slopes	Basswood, American						Cottonwood, eastern	
	Cherry, black						Oak, cherrybark	
	Cottonwood, eastern	120	130-100				Oak, Nuttall	
	Elms, American and slippery						Oak, Shumard	
							Oak, swamp chestnut	
	Hackberry and sugarberry						Oak, water	
							Oak, willow	
	Hickories (except water)						Pine, loblolly	
							Sweetgum	
	Maple, red						Sycamore, American	
	Magnolia, southern						Yellow-poplar	
	Oak, cherrybark	112±6	119-100					
	Oak, Nuttall	114	116-102					
	Oak, southern red							
	Oak, water	104±7	111-92					
	Oak, white							
	Oak, willow	104	108-94					
	Persimmon, common							
	Pine, loblolly	103±5	110-96					
	Pine, slash	103	110-96					
	Sassafras							
	Sweetgum	102±8	111-90					
	Tupelo, black							
	Walnut, black							
	Yellow-poplar							

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	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collins silt loam 0-2% slopes Frequently flooded				slight	moderate	moderate		1w8
Dexter loam, silt loam fine sandy loam 0-17% slopes	Basswood, American Cherry, black Oak, cherrybark Oak, southern red Oak, water Oak, white Pine, loblolly Sweetgum Sycamore, American Tupelo, black Walnut, black	 110 	 105-80 95-75 115-100 105-80 	slight	slight	slight	Oak, cherrybark 1/ Oak, Shumard 1/ Oak, swamp chestnut 1/ Oak, water 1/ Pine, loblolly Sweetgum 1/ Yellow-poplar 1/	1o7
Falaya silt loam 0-2% slopes	Ash, green Baldcypress Cottonwood, eastern Elms, American and slippery Hackberry and sugarberry Hickories (except water) Magnolia, southern Maple, red Oak, cherrybark Oak, Nuttall Oak, overcup Oak, Shumard Oak, swamp chestnut Oak, water Oak, white Oak, willow Persimmon, common Pine, loblolly Pine, slash Sweetgum	92±6 110* 102±7 109 102±4 99±7 104 104*	104-70 120-90 109-90 111-97 109-90 103-89 110-98 111-98	slight	moderate	slight	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Yellow-poplar	1w8
Falaya silt loam 0-2% slopes Frequently flooded				slight	severe	moderate		1w9
Falkner silt loam 0-8% slopes	Oak, cherrybark Oak, swamp chestnut Oak, water Oak, white Pine, loblolly Pine, shortleaf Sweetgum Sycamore, American Yellow-poplar	 90 75 	100-80 90-70 96-85 80-70 95-80 	slight	moderate	slight	Oak, cherrybark Oak, Shumard Oak, water Pine, loblolly Pine, shortleaf Sweetgum	2w8

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1/ Plant hardwoods only on uneroded sites.

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Frost silt loam 0-2% slopes	Oak, cherrybark Oak, southern red Oak, water Pine, loblolly Sweetgum Yellow-poplar	 90*	 95-86	slight	severe	moderate	Oak, cherrybark Pine, loblolly Sweetgum	2w9
Grenada silt loam 0-17% slopes	Oak, cherrybark Oak, southern red Oak, swamp chestnut Oak, water Oak, white Pine, loblolly Pine, slash Sweetgum Yellow-poplar	85 80 95 95	90-70 85-65 100-90 100-90 85-70	slight	slight	slight	Oak, cherrybark 1/ Oak, Shumard 1/ Oak, southern red 1/ Oak, water 1/ Oak, white 1/ Pine, loblolly Pine, shortleaf Sweetgum 1/	2o7
Henry silt loam 0-2% slopes	Oak, cherrybark Oak, Nuttall Oak, southern red Oak, swamp chestnut Oak, water Oak, white Oak, willow Pine, loblolly Pine, slash Sweetgum Tupelo, black Yellow-poplar	79±5 72 76±2 74±7 90±5 90 76±6	85-70 80-65 83-65 80-65 95-80 95-80 83-65	slight	severe	moderate	Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, water Oak, willow Pine, loblolly Sweetgum Pine, slash	2w9
Lax silt loam 0-17% slopes	Oak, cherrybark Oak, swamp chestnut Oak, water Oak, white Pine, loblolly Pine, slash Sweetgum Sycamore, American Pine, longleaf	 89 90 73	90-75 85-70 95-84 90-85 90-75 79-68	slight	slight	slight	Oak, cherrybark Oak, Shumard Oak, water Pine, loblolly Sweetgum Yellow-poplar Pine, slash	2o7
Lexington silt loam 0-17% slipes	Cherry, black Hickories (except water) Oak, cherrybark Oak, southern red Oak, water Oak, white Oak, willow Pine, loblolly Pine, shortleaf Sweetgum Sycamore, American Tupelo, black Yellow-poplar Walnut, black	 80 80* 90 89	 95-75 85-70 96-85 95-75	slight	slight	slight	Oak, cherrybark Oak, Shumard Oak, swamp chestnut Oak, water Pine, loblolly Pine, shortleaf Sweetgum Yellow-poplar	2o7

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Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Loring silt loam 0-17% slopes	Hickories (except water) Magnolia, southern Oak, cherrybark Oak, Shumard Oak, southern red Oak, water Oak, white Pine, loblolly Pine, shortleaf Sweetgum Tupelo, black Yellow-poplar	86 82 95 80 90	95-71 89-67 101-90 86-75 99-80	slight	slight	slight	Ash, green 1/ Oak, cherrybark 1/ Oak, Shumard 1/ Oak, southern red 1/ Oak, swamp chestnut 1/ Oak, water 1/ Oak, white 1/ Pine, loblolly Pine, shortleaf Sweetgum 1/ Sycamore, American 1/ Yellow-poplar	2o7
Memphis silt loam 0-17% slopes	Oak, cherrybark Oak, Shumard Oak, southern red Oak, swamp chestnut Oak, water Oak, white Oak, willow Pine, loblolly Pine, shortleaf Sweetgum Tupelo, black Walnut, black Yellow-poplar	100 90 90 103+6 90 90	105-90 95-75 95-75 110-96 96-85 100-80	slight	slight	slight	Oak, cherrybark 1/ Oak, Shumard 1/ Oak, southern red 1/ Oak, water 1/ Oak, white 1/ Oak, willow 1/ Pine, loblolly Pine, shortleaf Sweetgum 1/ Walnut, black 1/ Yellow-poplar 1/	1o7
Memphis silt loam 17-45% slopes	Ash, green or white Basswood, American Cherry, black Cottonwood, eastern Hickories (except water) Magnolia, southern Oak, cherrybark Oak, Shumard Oak, southern red Oak, water Oak, white Oak, willow Persimmon, common Pine, loblolly Sassafras Sweetgum Tupelo, black Walnut, black Yellow-poplar	87 105 115 100 100 103+6 105	97-60 110-85 120-100 105-90 105-90 110-96 110-90	moderate	moderate	slight	Ash, green or white 1/ Cottonwood, eastern 1/ Oak, cherrybark 1/ Oak, Shumard 1/ Oak, swamp chestnut 1/ Oak, water 1/ Oak, willow 1/ Pine, loblolly Pine, slash Sweetgum 1/ Sycamore, American 1/ Yellow-poplar 1/	1r8
Morganfield silt loam 0-2% slopes	Ash, green Cottonwood, eastern Elms, American and slippery Hackberry and sugarberry Oak, cherrybark Oak, Nuttall Oak, water Pecan Sweetgum Walnut, black	90* 115 110	100-75 125-95 120-100	slight	slight	slight	Ash, green Cottonwood, eastern Sweetgum Sycamore, American	1o4

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	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Natchez silt loam 0-17% slopes	Oak, cherrybark Oak, Shumard Oak, white Pine, loblolly Pine, slash	 100 100	115-100 105-96 105-96	slight	slight	slight	Oak, cherrybark Oak, Shumard Oak, white Pine, loblolly	1o7
Natchez silt loam 17-45% slopes	Basswood, American Cottonwood, eastern Magnolia, southern Oak, cherrybark Oak, water Pine, loblolly Sassafras Sweetgum	 100 	 115-100 105-96 110-100	moderate	moderate	slight	Ash, green or white Cottonwood, eastern Pine, loblolly Sweetgum Sycamore, American	1r8
Olivier silt loam 0-5% slopes	Oak, cherrybark Oak, Nuttall Oak, water Pine, loblolly Oak, white Oak, willow Sweetgum Yellow-poplar	93 96 81 99 - 73 86 -	95-78 98-81 88-66 105-93 80-65 93-71 	slight	moderate	slight	Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, swamp chestnut Oak, water Oak, willow Sweetgum Pine, loblolly	1w8
Paden silt loam 0-5% slopes	Oak, cherrybark Oak, southern red Oak, swamp chestnut Oaks, upland Oak, water Oak, white Pine, loblolly Pine, longleaf Pine, shortleaf Sweetgum Yellow-poplar	 86±7 73±6 72±8 	 92-80 80-68 80-68 	slight	slight	slight	Oak, cherrybark Oak, Shumard Oak, southern red Oak, water Oak, white Pine, loblolly Pine, shortleaf Sweetgum	2o7
Providence silt loam 0-17% slopes	Oak, cherrybark Oak, Shumard Oak, swamp chestnut Oak, water Oak, white Pine, loblolly Pine, longleaf Sweetgum Sycamore, American	 87±6 73±5 	 94-80 80-67 	slight	slight	slight	Oak, cherrybark Oak, Shumard Pine, loblolly Sweetgum Yellow-poplar	2o7
Rosebloom silt loam 0-5% slopes	Ash, green Baldcypress Cottonwood, eastern Elm, American Hackberry Hickory, water Honeylocust Magnolia, southern Maple, red Oak, cherrybark Oak, Nuttall	90±6 100* 87 95*	102-75 110-85 92-80 102-88	slight	severe	moderate	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Tupelo, water Pine, loblolly	2w9

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RTSC-FW-2 (Rev. S-68)
Fort Worth, Texas

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TABLE 2. SOIL RATINGS FOR WOODLAND USE Page 7 of 8

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rosebloom(Cont'd)								
	Oak, overcup							
	Oak, Shumard							
	Oak, water	99	101-92					
	Oak, white							
	Oak, willow	80	84-73					
	Persimmon, common							
	Sweetgum	89±10	96-82					
	Pine, loblolly	95						
Routon silt loam 0-5% slopes	Ash, green or white		100-80	slight	severe	moderate to severe	Ash, green or white Oak, cherrybark Oak, Nuttall Oak, swamp chestnut Oak, water Sweetgum Sycamore, American Yellow-poplar	lw6
	Elms, American and slippery							
	Hackberry							
	Honeylocust							
	Oak, cherrybark	110	112-98					
	Oak, Shumard							
	Oak, water		100-80					
	Oak, white							
	Oak, willow							
	Sweetgum		110-100					
Tippo silt loam 0-2% slopes	Ash, green or white	58	70-50	slight	moderate	slight	Ash, green or white Oak, cherrybark Oak, Shumard Sweetgum Pine, loblolly	lw8
	Oak, cherrybark	80*	90-70					
	Oak, swamp chestnut							
	Oak, white							
	Sweetgum	91	93-71					
	Yellow-poplar							
	Pine, loblolly	97	104-90					
Vicksburg silt loam 0-5% slopes	Ash, green	90*	102-68	slight	slight	slight	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Yellow-poplar Pine, loblolly	lo7
	Basswood, American							
	Cherry, black							
	Cottonwood, eastern	105*	120-85					
	Hackberry and sugarberry							
	Hickories (except water)							
	Magnolia, southern							
	Maple, red							
	Oak, cherrybark	100*	107-88					
	Oak, Nuttall	95*	102-83					
	Oak, southern red							
	Oak, water	95*	102-83					
	Oak, white							
	Oak, willow	100*	104-90					
	Pine, loblolly	105	110-98					
	Pine, shortleaf							
	Sassafras							
	Sweetgum	98	107-86					
	Tupelo, black							
	Walnut, black							
	Yellow-poplar							

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TABLE 2. SOIL RATINGS FOR WOODLAND USE

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Waverly silt loam 0-5% slopes	Ash, green Cottonwood, eastern Elms, American and slippery Hackberry and sugarberry Honeylocust Magnolia, southern Maple, red Oak, cherrybark Oak, Nuttall Oak, overcup Oak, Shumard Oak, water Oak, white Oak, willow Persimmon, common Pine, loblolly Sweetgum Yellow-poplar	89 105 90±10 111 93±4 93±4 95 100±2 	101-74 110-90 97-81 113-102 100-86 95-83 100-90 107-93 	slight	severe	severe	Ash, green Baldcypress Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Tupelo, water Pine, loblolly	2w9

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Table 3, SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY, is a summary of the most important interpretations for a woodland suitability group of soils.

Column one (1) includes the suitability group symbol and a brief description of the group of soils, including their important hazards and limitations for woodland use and management.

Column two (2) is a tabulation of the soil units within each woodland suitability group.

Column three (3) is a list of some commercially-important tree species which occur on the soils in each suitability group.

Column four (4) shows the site class (site index rounded off to the nearest 10-foot interval) for the most important tree species listed in column three.

Column five (5) lists some of the most important tree species which are suitable for planting or direct seeding on the soils in each suitability group.

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TABLE 3 . SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY Page 1 of 3

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
1o4 Loamy soils with very high potential productivity; no serious management problems; best suited for southern hardwoods.	Adler silt loam, 0-2% slopes Morganfield silt loam, 0-2% slopes	Ash, green Cottonwood Elm, American Hackberry Honeylocust Maple, red Oak, cherrybark Oak, Nuttall Oak, water Oak, willow Pecan Sweetgum Sycamore Walnut, black Elm, slippery	90 110 110 90 110	Ash, green Cottonwood Oak, cherrybark Oak, Nuttall Oak, water Sweetgum Sycamore
1o7 Loamy soils with very high potential productivity; no serious management problems, suitable for southern hardwoods and pines.	Collins silt loam, 0-2% slopes Dexter silt loam, fine sandy loam, 0-17% slopes Memphis silt loam, 0-17% slopes Natchez silt loam, 0-17% slopes Vicksburg silt loam, 0-5% slopes	Ash, green Basswood Black cherry Cottonwood Elms, American and slippery Hackberry Sugarberry Hickories (except water) Maple, red Oak, cherrybark Oak, Nuttall Oak, southern red Oak, water Oak, white Oak, willow Persimmon Pine, loblolly Pine, slash Sassafrass Sweetgum Tupelo, black Walnut, black Yellow-poplar	100 110-120 110 110 100 100 100 100 100 	Oak, cherrybark 1/ Oak, Nuttall 1/ Oak, water 1/ Oak, willow 1/ Pine, loblolly Pine, slash Sweetgum 1/ Sycamore 1/ Walnut, black 1/ Yellow-poplar 1/
1w5 Seasonally wet soils with very high productivity; moderate equipment limitations, and slight to moderate seedling mortality; best suited for southern hardwoods.	Adler silt loam, 0-2% slopes, frequently flooded	Ash, green Cottonwood, eastern Elms, American and slippery Hackberry and sugarberry Honeylocust Maple, red Oak, cherrybark Oak, Nuttall Oak, water Oak, willow Pecan Walnut, black Sycamore	 110 110 100 	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, water
1w6 Excessively wet soils with very high productivity; severe equipment limitations, and moderate to severe seedling mortality; best suited for southern hardwoods.	Routon silt loam, 0-5% slopes	Ash, green or white Elms, American and slippery Hackberry Honeylocust Oak, cherrybark Oak, Shumard Oak, water Oak, white Oak, willow Sweetgum	90 110 90 100	Ash, green or white Oak, cherrybark Oak, Nuttall Oak, swamp chestnut Oak, water Sweetgum Sycamore, American Yellow-poplar

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1/ Plant hardwoods only on uneroded sites.

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY Page 2 of 3

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
1w8 Seasonally wet soils with very high productivity; moderate equipment limitations and slight to moderate seedling mortality; suitable for southern hardwoods or pines.	Arkabutla silt loam to silty clay loam, 0-2% slopes Bude silt loam, 0-5% slopes Collins silt loam, 0-2% slopes, flooded Falaya silt loam, 0-2% slopes Olivier silt loam, 0-5% slopes Tippo silt loam, 0-2% slopes	Ash, green Cottonwood, eastern Elms, American and slippery Hackberry Honeylocust Maple, red Oak, cherrybark Oak, laurel Oak, Nuttall Oak, overcup Oak, water Oak, white Oak, willow Persimmon, common Pine, loblolly Sweetgum	90 110 100 110 100 100 100 100	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Pine, loblolly Yellow-poplar
1w9 Excessively wet soils with very high productivity; severe equipment limitations and moderate to severe seedling mortality; suitable for southern hardwoods or pines.	Arkabutla silt loam to silty clay loam, 0-2% slopes, frequently flooded. Falaya silt loam 0-2% slopes, frequently flooded	Ash, green Cottonwood, eastern Elms, American and slippery Hackberry Honeylocust Maple, red Oak, cherrybark Oak, laurel Oak, Nuttall Oak, overcup Oak, water Oak, white Oak, willow Persimmon, common Pine, loblolly Sweetgum	90 110 100 110 100 100 100 100	Ash, green Cottonwood, eastern Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, swamp chestnut Oak, water Oak, willow Sweetgum Sycamore, American Pine, loblolly Yellow-poplar
1r8 Soils with very high productivity; moderate equipment limitations and erosion hazard associated with slope steepness; suitable for southern pines or hardwoods.	Memphis silt loam, 17-45% slopes Natchez silt loam, 17-45% slopes	Oak, cherrybark Oak, Shumard Oak, southern red Oak, swamp chestnut Oak, water Oak, white Oak, willow Pine, loblolly Sweetgum Tupelo, black Walnut, black Yellow-poplar	110 100 100 100 100	Oak, cherrybark [1] Oak, Shumard [1] Oak, swamp chestnut [1] Oak, water [1] Oak, willow [1] Pine, loblolly [1] Pine, slash [1] Sweetgum [1] Sycamore, American [1] Yellow-poplar [1]
2o7 Loamy soils with high productivity; no serious management problems; suitable for southern hardwoods or pines.	Atwood silt loam 0-8% slopes Grenada silt loam 0-17% slopes Lax silt loam, 0-17% slopes Lexington silt loam 0-17% slopes Loring silt loam 0-17% slopes Paden silt loam 0-5% slopes Providence silt loam, 0-17% slopes	Cherry, black Hickories (except water) Oak, cherrybark Oak, southern red Oak, water Oak, white Oak, willow Pine, loblolly Pine, slash Sweetgum Sycamore, American Tupelo, black Walnut, black Yellow-poplar	 80 90 90 90 90 90	Oak, cherrybark [1] Oak, Shumard [1] Oak, swamp chestnut [1] Oak, water [1] Pine, loblolly Pine, slash Sweetgum [1] Yellow-poplar [1]

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TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY Page 3 of 3

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
2w8 Seasonally wet soils with high productivity; moderate equipment limitations and slight to moderate seedling mortality; suitable for southern hardwoods or pines	Calloway silt loam, 0-5% slopes Falkner silt loam, 0-8% slopes	Ash, green or white Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, southern red Oak, swamp chestnut Oak, water Oak, willow Oak, white Pine, loblolly Pine, slash Sweetgum Sycamore, American Tupelo, black Yellow-poplar Pine, longleaf	70 80 80 80 80 90+ 90+ 90 80	Ash, green or white Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, water Oak, willow Sweetgum Yellow-poplar Pine, loblolly Pine, slash
2w9 Excessively wet soils with high productivity; severe equipment limitations and moderate to severe seedling mortality; suitable for southern hardwoods or pines.	Calhoun silt loam 0-2% slopes Frost silt loam, 0-2% slopes Henry silt loam, 0-2% slopes Rosebloom silt loam, 0-5% slopes Waverly silt loam, 0-5% slopes	Oak, cherrybark Oak, Nuttall Oak, southern red Oak, swamp chestnut Oak, water Oak, white Oak, willow Pine, loblolly Pine, slash Sweetgum Tupelo, black Yellow-poplar	80-90 70 80 70 90 90 80-90	Oak, cherrybark Oak, Nuttall Oak, Shumard Oak, water Oak, willow Pine, loblolly Pine, slash Sweetgum

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